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EXAMINER

NATNAEL, PAULO S M

ART UNIT

PAPER NUMBER

2614

DATE MAILED: 03/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Handwritten signature/initials

Office Action Summary

Application No.

09/217,873

Applicant(s)

RAPAICH, MARK

Examiner

Paulos M. Natnael

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Feb. 25, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

2. Claims **1-3, 5-8, 10** are **again** rejected under 35 U.S.C. 102(e) as being anticipated by Aleksic et al., U.S. Pat. No. 6,020,921.

Considering claim **1**, Aleksic discloses all claimed subject matter, note;

A) the claimed video source capable of providing a digital YUV video signal is met by Frame buffer 1 and VIDEO IN (FIG 2), which “apply a YUV signal to a gamma correction circuit 3....” (col 2, lines 64-65)

B) the claimed video output capable of connecting to a video display device is met by the output of D/A 9 to the CRT 11 (FIG.2).

C) the claimed digital processor **computationally** employing a corrective algorithm that applies gamma correction to the digital YUV signal provided by the video source and provides a corrected signal to the video output is met by gamma correction circuit 3 (FIG.2). (See also disclosure of a software-implemented embodiment on col.5, lines 57-67 to col.6, lines 1-35)

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Considering claim 2, the claimed wherein the digital processor further employs a corrective algorithm that corrects at least one of color saturation correction, tint correction, brightness correction and contrast correction, is **inherent**, because all personal computers and other types of displays have brightness correction, for example.

Considering claim 3, the claimed software module for user configuration of the digital processor that corrects the digital YUV signal;

Regarding claim 3, see rejection of claim 1(C).

Considering claim 5, the claimed wherein the digital YUV video signal is encoded with a correction factor that is compensated for in applying the corrective algorithm to the digital YUV signal is met by the disclosure that "the gamma correction value 0.45, 1/1.8 and 1/1.4" is given as QUAL_GAMMA_SEL . (col. 5, lines 65 through col.6, line 35) (See also discussion in Cols. 3-5)

Considering claim 6, Aleksic discloses all claimed subject matter, note;

a) the claimed process of receiving a YUV digital video signal is met by LIMIT Y 5 (FIG 2), which receives the YUV signal applied by VIDEO IN and FRAME BUFFER 1 that "apply a YUV signal to a gamma correction circuit 3...." (col 2, lines 64-65)

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b) the claimed process of **computationally** applying gamma correction to the digital YUV signal within a personal computer is met by the gamma correction circuit 3 (FIG.2). (See also disclosure of an software-implemented embodiment on col.5, lines 57-67 to col.6, lines 1-35)

c) the claimed process of providing a corrected digital YUV signal to an output for connection to a display device is met by the output of gamma correction 3 to conversion circuit 9 (FIG.2).

Considering claim 7, see rejection of claim 2.

Considering claim 8, see rejection of claim 3.

Considering claim 10, see rejection of claim 5.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 9 are **again** rejected under 35 U.S.C. 103(a) as being unpatentable over

Aleksic et al., U.S. Pat. No. 6,020,921. *in view of Margules et al.*

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Considering claim 4, Aleksic discloses all claimed subject matter, except for;

a) the claimed wherein the video sources comprise multiple sources selected from the group consisting of MPEG, NTSC, CVD, CD.

Regarding a), Aleksic discloses a gamma correction circuit for **multimedia**, which is used in such device “as those used to drive computer displays” and “computer displays are typically driven by an analog RGB signal which is derived from a YUV to RGB conversion circuit...” (Col. 1, lines 1-13)

→ Margulis et al., U.S. Pat. No. 6,340,994 discloses a system and method for using Bitstream information to process images for use in digital display systems. Margulis specifically discloses color and Spatial gamma correction 410 and temporal gamma processor 412 (FIG.4) (See also col. 13, lines 44-64) Margulis teaches that “MPEG-2 can be applied to both standard definition television (SDTV) and high definition television (HDTV).” (Col. 3, lines 40-45)

Therefore, it would have been obvious to the skilled in the art to modify the gamma correction 3 of Aleksic with the gamma correction circuits of Margulis which video sources include MPEG-2 that can be applied to both SDTV (or NTSC) and HDTV.

Considering claim 9, see rejection of claim 4.

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5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Aleksic et al.**, U.S. Pat. No. 6,020,921 in view of **Warren et al.**, U.S. Pat. No. 6,304,300.

Considering claim 11, Aleksic et al. disclose the following claimed subject matter, note

B) the claimed video source capable of providing a digital YUV video signal is met by Frame buffer 1 and VIDEO IN (FIG 2), which “apply a YUV signal to a gamma correction circuit 3....” (col 2, lines 64-65)

C) the claimed video output capable of connecting to a video display device is met by the output of D/A 9 to the CRT 11 (FIG.2).

D) the claimed digital processor employing a corrective algorithm that applies gamma correction to the digital YUV signal provided by the video source and provides a corrected signal to the video output is met by gamma correction circuit 3 (FIG.2). (See also disclosure of a software-implemented embodiment on col.5, lines 57-67 to col.6, lines 1-35)

Except for;

A) the claimed personal computer system comprising a processor, a bus, a main memory, a system controller, and graphics controller.

Regarding a), Aleksic et al. does not disclose the listed items. However these items are well known in the art of any personal computer (PC) systems. A PC would not function as a computer without a processor, memory or graphics controller.

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In that regard, Warren et al. discloses a floating point **gamma correction** method and system in which Warren illustrates a block diagram (FIG.8) of a **computer graphics system** [which is exemplary only in that the invention can operate within a number of different computer system configurations] within which the invention may be implemented or practiced. (Col. 9. Lines 50- 60) Warren's computer graphics system (FIG.8) includes, inter alia, a processor, a bus, a main memory, a graphics subsystem.

Accordingly, therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Aleksic et al by providing Warren's teachings of the computer graphics system within which the gamma correction would be implemented in the system of Aleksic et al. in view of their related performance and the resulting expectation of similar gamma corrected output.

Response to Arguments

6. Applicant's arguments filed Feb. 25, 2002 have been fully considered but they are not persuasive.

Applicant's Argument

a) In contrast, the present invention utilizes and claims a digital processor employing a corrective algorithm that computationally applies gamma correction to a digital YUV signal. That is, the present invention does not utilize a lookup table [emphasis added] or switch between straight-

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line approximations of gamma correction curve as are discussed in Aleksic, but instead utilized a digital processor to computationally apply a corrective algorithm to the digital YUV signal to perform gamma correction.

b) Applicant respectfully traverses the assertion of Official Notice and requests that the Examiner cite references in support of this position should it be maintained.

Examiner's Response

a) Applicant admits (page 6 of the specification), that "The [mathematical] algorithm comprises a lookup table [emphasis added] having a gamma values similarly determined at each of a plurality of signal levels dependent upon display device characteristics". Hence, again, this particular argument is totally unpersuasive.

B) see rejection of claim 4.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) Kitagawa et al., U.S. Patent # 6,278,496 discloses a digital gamma correction circuit and image data processing apparatus equipped with a digital correction circuit.

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B) Margulus et al., U.S. Patent # 6,340,994 discloses a system and method for using Bitstream information to process images for use in digital display systems, and particularly color/spacial gamma correction 410 and temporal gamma processing 412 (FIG.4).

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Paulos Natnael** whose telephone number is **(703) 305-0019**. The examiner can normally be reached on **Monday through Friday** from **6:30 a.m.** to **3:00 p.m.**

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John Miller**, can be reached on **(703) 305-4795**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is **(703) 305-3900**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry)

or:


(703) 872-9314 (for informal or draft communications, please label "PROPOSED" OR "DRAFT").

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, V.A. Sixth Floor (Receptionist).

Paulos M. Natnael

October 19, 2002

Pmn


JOHN MILLER
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